

WHAT IS CLAIMED IS:

1. A magnetic recording medium comprising:
  - a nonmagnetic substrate;
  - a nonmagnetic foundation layer formed over the nonmagnetic substrate, wherein said foundation layer has a body-centered cubic crystal structure with a preferred crystal orientation plane being a bcc (110) plane;
  - a granular magnetic layer formed over the nonmagnetic foundation layer;and
  - a protective layer formed over the granular magnetic layer;
  - wherein a nonmagnetic intermediate layer, located between said foundation layer and said granular magnetic layer, has a hexagonal close-packed structure with an hcp (100) plane or an hcp (200) plane being a preferred orientation plane.
2. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ge and at least one selected from the group consisting of Fe and Mn.
3. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy including at least Co and at least one selected from the group consisting of W and Mo.

4. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ti and at least one selected from the group consisting of Pd, Ga and Al.

5. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ni and at least one selected from the group consisting of Zr, Sn and In.

6. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy of Fe and Sn.

7. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises a compound containing at least one selected from the group consisting of carbides and nitrides of Co, Ni and Fe.

8. The magnetic recording medium according to claim 1, wherein said nonmagnetic intermediate layer comprises an alloy including an Ni<sub>3</sub>Sn-type or AuCd-type regular lattice structure.

9. The magnetic recording medium according to claim 1, wherein a crystal lattice misfit amount between said nonmagnetic intermediate layer and said granular magnetic layer is not more than 10% for each of an a-axis and a c-axis.

10. The magnetic recording medium according to claim 1, wherein nonmagnetic grain boundaries in said granular magnetic layer comprise at least one oxide of at least one element selected from the group consisting of Cr, Co, Si, Al, Ti, Ta, Hf and Zr.

11. The magnetic recording medium according to claim 1, wherein ferromagnetic crystals in said granular magnetic layer comprise a CoPt alloy; and wherein the CoPt alloy has at least one element selected from the group consisting of Cr, Ni and Ta added thereto.

12. The magnetic recording medium according to claim 1, wherein said foundation layer is made of any material selected from the group of metals consisting of Ta, Cr, W, Mo and V, the group of Cr alloys consisting of CrMo, CrTi, CrV and CrW, and the group of Ti alloys consisting of TiW, TiMo, TiCr and TiV each containing 10 to 60 at% of Ti.

13. The magnetic recording medium according to claim 1, wherein said nonmagnetic substrate comprises a plastic resin.

14. The magnetic recording medium according to claim 1, further comprising a liquid lubricant layer formed over the protective layer.

15. A method of manufacturing a magnetic recording medium comprising:

depositing a nonmagnetic foundation layer on an unheated nonmagnetic substrate, wherein said foundation layer has a body-centered cubic crystal structure with a preferred crystal orientation plane being a bcc (110) plane;

depositing a nonmagnetic intermediate layer over said nonmagnetic foundation layer, wherein said nonmagnetic intermediate layer has a hexagonal close-packed structure with an hcp (100) plane or an hcp (200) plane being a preferred orientation plane;

depositing a granular magnetic layer over the nonmagnetic intermediate layer; and

depositing a protective layer over the granular magnetic layer;

16. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ge and at least one selected from the group consisting of Fe and Mn.

17. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy including at least Co and at least one selected from the group consisting of W and Mo.

18. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ti and at least one selected from the group consisting of Pd, Ga and Al.

19. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy including at least Ni and at least one selected from the group consisting of Zr, Sn and In.
20. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy of Fe and Sn.
21. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises a compound containing at least one selected from the group consisting of carbides and nitrides of Co, Ni and Fe.
22. The method according to claim 15, wherein said nonmagnetic intermediate layer comprises an alloy including an Ni<sub>3</sub>Sn-type or AuCd-type regular lattice structure.
23. The method according to claim 15, wherein a crystal lattice misfit amount between said nonmagnetic intermediate layer and said granular magnetic layer is not more than 10% for each of an a-axis and a c-axis.
24. The method according to claim 15, wherein nonmagnetic grain boundaries in said granular magnetic layer comprise at least one oxide of at least one element selected from the group consisting of Cr, Co, Si, Al, Ti, Ta, Hf and Zr.

25. The method according to claim 15, wherein ferromagnetic crystals in said granular magnetic layer comprise a CoPt alloy; and wherein the CoPt alloy has at least one element selected from the group consisting of Cr, Ni and Ta added thereto.

26. The method according to claim 15, wherein said foundation layer is made of any material selected from the group of metals consisting of Ta, Cr, W, Mo and V, the group of Cr alloys consisting of CrMo, CrTi, CrV and CrW, and the group of Ti alloys consisting of TiW, TiMo, TiCr and TiV each containing 10 to 60 at% of Ti.

27. The method according to claim 15, wherein said nonmagnetic substrate comprises a plastic resin.

28. The method according to claim 15, further comprising coating a liquid lubricant layer over the protective layer;